Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A cooling system for a switching power supply, said power supply having a primary circuit comprising a semiconductor switch, wherein said cooling system comprises:

(a) a capacitor and diode in series, together connected in parallel with said switch;

(b) a power converter connected in parallel with said capacitor; and

(c) a cooling element powered by said power converter for cooling said switching power supply, wherein the voltage of said cooling element varies automatically in proportion to the current provided to said primary circuit.

2. (Currently amended) The cooling system of claim 1, wherein said cooling element is a variable speed fan ~~and wherein the voltage at said fan varies in proportion to the current provided to said primary circuit~~.

3. (Original) The cooling system of claim 1, wherein said cooling element is a liquid pump.

4. (Original) The cooling system of claim 1, wherein said cooling element is a Peltier device.

5. (Original) The cooling system of claim 1, wherein said power converter is a DC/DC converter.

6. (Original) The cooling system of claim 1, wherein said power converter is a DC/AC converter.

7. (Currently amendedl) A method of cooling a switching power supply, said power supply having a primary circuit comprising a semiconductor switch, comprising the steps of:

(a) electrically connecting a series-connected capacitor and diode in parallel with said switch;

(b) electrically connecting a power converter in parallel with said capacitor;

(c) electrically connecting a cooling element to the output of said power converter;

(d) shunting energy from said switch through said diode to said capacitor;

(e) discharging energy from said capacitor to said power converter to power said cooling element; and

(f) operating said cooling element to cool said switching power supply, wherein the output of said cooling element varies automatically in proportion to the current supplied to said primary circuit.

8. (Currently amended) The method as defined in claim 7, wherein said cooling element is a variable speed fan~~, and wherein the voltage at said fan varies in proportion to the current provided to said primary circuit~~.

9. (Original) The method as defined in claim 7, wherein said cooling element is a liquid pump.

10. (Original) The method as defined in claim 7, wherein said cooling element is a Peltier device.

11. (Original) The method as defined in claim 7, wherein said power converter is a DC/DC converter.

12. (Original) The method as defined in claim 7, wherein said power converter is a DC/AC converter.

13. (Currently amended) A cooling system for an electrical system having a switching power supply, said power supply having a primary circuit comprising a semiconductor switch, wherein said cooling system comprises:

(a) a capacitor and diode in series, together connected in parallel with said switch;

(b) a power converter connected in parallel with said capacitor; and

(c) a cooling element powered by said power converter for cooling said electrical system, wherein the voltage at said cooling element varies automatically in proportion to the current provided to said primary circuit.

14. (Currently amended) The cooling system of claim 13, wherein said cooling element is a variable speed fan and wherein the voltage of said cooling element varies automatically in proportion to the current provided to said primary circuit.

15. (Original) The cooling system of claim 13, wherein said cooling element is a liquid pump.

16. (Original) The cooling system of claim 13, wherein said cooling element is a Peltier device.

17. (Original) The cooling system of claim 13, wherein said power converter is a DC/DC converter.

18. (Original) The cooling system of claim 13, wherein said power converter is a DC/AC converter.

19. (Currently amended) A method of cooling an electrical system having a switching power supply, said power supply having a primary circuit comprising a semiconductor switch, comprising the steps of:

(a) electrically connecting a series-connected capacitor and diode in parallel with said switch;

(b) electrically connecting a power converter in parallel with said capacitor;

(c) electrically connecting a cooling element to the output of said power converter;

(d) shunting energy from said switch through said diode to said capacitor;

(e) discharging energy from said capacitor to said power converter to power said cooling element; and

(f) operating said cooling element to cool said electrical system, wherein the output of said cooling element varies automatically in proportion to the current supplied to said primary circuit.

20. (Currently amended) The method as defined in claim 19, wherein said cooling element is a variable speed fan~~, and wherein the voltage at said fan varies in proportion to the current provided to said primary circuit~~.

21. (Original) The method as defined in claim 19, wherein said cooling element is a liquid pump.

22. (Original) The method as defined in claim 19, wherein said cooling element is a Peltier device.

23. (Original) The method as defined in claim 19, wherein said power converter is a DC/DC converter.

24. (Original) The method as defined in claim 19, wherein said power converter is a DC/AC converter.

25. (New) A switching power supply having a circuit comprising a parasitic inductance, said power supply comprising a cooling element powered by said power supply, wherein the voltage of said cooling element varies automatically in proportion to the current provided to said parasitic inductance.

26 (New) A method of cooling an electrical system having a switching power supply, said power supply having a circuit comprising a parasitic inductance connected to a semiconductor switch, comprising the steps of:

(a) providing a cooling element powered exclusively by said power supply; and

(b) automatically adjusting the voltage at said cooling element in proportion to the current provided to said parasitic inductance, thereby cooling said electrical system.

27. (New) The method as defined in claim 26, comprising storing energy recovered from said parasitic inductance in a capacitor and discharging energy from said capacitor to said cooling element in said proportion.